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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/469,070

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HANNA E. WITZGALL

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02/13/2003

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EXAMINER

ABDULSELAM, ABBAS I

ART UNIT

PAPER NUMBER

2674

DATE MAILED: 02/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/469,070

Applicant(s)

WITZGALL, HANNA E.

Examiner

Abbas I Abdulsalam

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 November 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Claim Rejection 35 U.S.C. 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Negishi et al.(USPN 5486878) in view of Takahara (USPN 6049364).

Regarding claims 1, 7 and 10, Negishi teaches about a color display system with a light source (LS), and spatial light modulation (SLM1, SLM2) passing through respective optical paths. See column 14, lines 13-28. Negishi teaches a dielectric mirror, and the application of a voltage between a light modulation layers through two transparent electrodes (Et1, Et2) which would produce a change that is expressed in wavelength. See column 30, lines 37-67, and Fig 36. Furthermore, Negishi teaches about a signal processing circuit (2) outputting a control signal which in turn is related to a drive circuit that is responsible for color switching and selecting operations. See column 30, lines 14-23 and Fig 36. Furthermore, Negishi transparent substrate (BP1, BP2) along with transparent electrodes. Negishi teaches a mixture of light to a substrate (BP2) side of the spacial light modulation element SLM.beta through the color resolving filter Fdf. See column 44, lines 20-30 and Fig 23-26. In addition, the primary colors emitted from three regions (red, green, blue) are focused on three spacial light modulation. See Fig 2. Negishi

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teaches about lights outgoing from the spatial light modulation elements (SLM1, SLM2, SLM3) and are projected on the screen S as a color image by way of the dot-dot-dashed line arrows.

Column 22, lines 17-31. Negishi, however, does not teach the projection optics on the light path operable to focus light from spatial light modulator on an image plane. Takahara on the other hand teaches a light generating means(241a), an optical path separating means (242a-242c) for separating the rays of light emitted from the light generating means into Red, green and Blue color optical paths and a light modulating means (243) for modulating light traveling through each of the optical path and projecting means (255) for projecting light modulated by the light modulating means. See Fig 28(A-B).

Therefore it would have been obvious to one having skill in the art at the time the invention was made to modify Negishi's color display system to adapt Takahara's light modulating means and optical path projecting means. One would have been motivated in view of the suggestion in Takahara that that the light modulating means (243) and optical path projection mean (255) can be equivalently applied to meet the desired "projection optics on the light path operable to focus light from spatial light modulator on an image plane". The use of light modulating means and optical path projection means helps function liquid crystal display system as taught by Takahara. See fig 28(A-B)

In addition Takahara teaches white rays of light emitted from a lamp (241a) are separated into three primary colors, red, green and blue by dichroic mirror (242a-242c). Takahara also teaches the display panel (243) that modulates the light incident on the panel, and further teaches

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the use of prism (441b) combining the modulated light into a single optical path and the combined light is subsequently projected by the projection lens (255) onto the screen. Moreover, Takahara teaches the transmission of electric signals with respect to switching element (14) and multi-layer dielectric film. See Fig 5A and FIG 28 AND Fig. 44.

Regarding claim 4, it has been discussed above.

Regarding claims 2 and 3, Negishi teaches dichroic prism (DF) which is used to synthesize two light beams. See Fig 47.

Regarding claim 5, Negishi teach spatial light modulation element, SLM with respect to a nature of dialectic mirror. Column 3, lines 7-17.

Regarding claim 6, Negishi teaches color section method in terms of liquid crystal layer. See column 30, lines 25-33.

Regarding claim s 8-9, Negishi teaches that electro-optic crystals such as Lithiumniobate, BSO, PLZT etc. as well as high molecular-liquid crystal copposite film can be used for modulation purposes. See column 2, lines 40-44.

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Conclusion

2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following arts are cited for further reference.

U.S. Pat No. 5,650,832 to Poradish et al.

U.S. Pat No. 5,570,139 to Wang

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3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Abbas Abdulsalam** whose telephone number is **(703) 305-8591**. The examiner can normally be reached Monday through Friday (9:00-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richard Hjerpe** can be reached at **(703) 305-4709**.

Any response to this actions should be mailed to :

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to

(703) 872-9314

Hand-delivered responses should be brought to Crystal park II, Crystal Drive, Arlington, VA Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology center 2600 Customer Service Office whose telephone number is (703) 306-0377.



RICHARD HJERPE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

Abbas Abdulsalam

Examiner

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